

Chapter 7: Cell catalog

This chapter catalogs the Meridian IVR cells and describes how you can use them in your application. In addition, this chapter lists the buffers used and updated, the cell parameters, next cells, and the tables. The following lists the abbreviated and full names of the cells as they appear in this chapter.

- “ADDR - address message” on page 7-4
- “ANSW - answer” on page 7-6
- “CASE - branch on value or range” on page 7-8
- “CDAT - convert data” on page 7-11
- “CEND - continuation outdial end” on page 7-14
- “CFAX - call back fax” (See the *Fax Application Guide* [NTP 555-9001-350]).
- “CHEK - check database” on page 7-15
- “COMA - host communications abort” on page 7-17
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- “DCAT - data file create/concatenate” (See the *Fax Application Guide*.)
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- “EXEC - execute application” on page 7-50
- “FDEL - data file delete” (See the *Fax Application Guide*.)
- “FRCV - fax modem receive” (See the *Fax Application Guide*.)
- “FRLS - fax modem release” (See the *Fax Application Guide*.)
- “FRSV - fax modem reserve” (See the *Fax Application Guide*.)
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- “XFER - transfer outdial” on page 7-134

Cell descriptions

The following items are explained in the cell descriptions. However, keep in mind that not every cell has parameters, next cells, and tables.

Name and abbreviation The name of the cell and its abbreviation.

Description What the cell does and how to use it.

Buffers used System buffers that supply information to the cell.

Buffers updated System buffers that the cell type updates with new data. Buffers pass information from one cell to another. You do not always have to tell the application which buffers you want to use because an application handles most buffers automatically, but you do need to consider what is happening to the buffers when you create an application. This is why each cell description tells you about the buffers that the application uses or updates.

Note: Buffer names are not case sensitive.

Parameters A list of all the parameters that you work with when you create a cell. For each parameter, the name, initial value, and a brief explanation of what it does are provided. Notice that the list of parameter names and initial values are shown exactly as you see them on the computer screen when you are creating or editing an application.

Each cell has a comment box parameter where you can add notes that explain or clarify what you are doing. Each comment box can hold up to 79 alphanumeric characters.

Next cells The branches that determine which cell comes after the current cell. Most cell types have more than one branch to the next cell. For each branch, an explanation of why the application would take that branch is given. The list of next cells is shown exactly as you see it on the screen.

Tables A list of tables that you fill with information for the cell to use. These same tables also appear on the screen. Each table has its own page on the computer screen.

ADDR - address message

Description

The ADDR cell is used to enable a message to be addressed by mailbox numbers. The address's full name is returned. The ADDR cell should be called after an RMSG has been successfully completed and before an SMSG cell call has been issued.

Cell type

Messages.

Buffers used

Buffer	Explanation
Current message	The number of the message to be addressed

Buffers updated

None.

Parameters

Parameter	Initial Value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment Field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Destination mailbox	Mailbox ID	First mailbox
Additional mailbox	None	Up to 9 optional mailboxes

Next cell

Next cell	Explanation
Error	The message was not addressed.
Success	The message was addressed successfully.

Tables

None.

ANSW - answer

Description

ANSW accepts the phone call on the current channel.

It is common to accept a call immediately at the start of the call, so the ANSW cell is often the second cell in an application (remember that we recommend always putting the HANG cell first). However, in some situations, you can postpone accepting the call until some sort of verification (for example, validating the calling or called number) has been performed. It is possible to build applications where a database look up or some other kind of verification is carried out before the ANSW cell is executed.

Note: Meridian IVR automatically answers the call, but the call must be answered through an ANSW cell at the earliest possible time.

The application is not allowed to play prompts before the ANSW cell is executed. This feature safeguards against fraudulent use of the telephone network.

Buffers used

None.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment Field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.

Next cell

Next cell	Explanation
Success	This is the only branch.

Tables

None.

CASE - branch on value or range

Description

CASE compares the contents of a buffer to a selection of predefined criteria and passes the control to the branch that corresponds with the criteria.

You can set the selection criteria to either match exactly one of a set of values or to fall within a range of values. In that case, the Match Criteria parameter is set to RANGE, and the values in the Valid Cases table must be ordered from lowest to highest.

CASE is useful in applications for

- altering functionality and prompts based on data value such as time, date, day, or other codes set by your application
- validating input and evaluating return codes from a GSUB
- creating a subroutine library which is a palette that contains multiple related subroutine sections where the desired functionality is specified by one of the parameters

Buffers used

None.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Selection Criteria	DIGITS	A buffer that contains the selection criteria for the CASE cell.
Comparison Type	NUMERIC	The type of comparison the cell performs. The valid choices are: NUMERIC STRING

Match Criteria	EXACT	The criteria the application uses to determine which branch to take. The valid choices are: EXACT RANGE If you select the EXACT match option in the Match Criteria parameter, the application either finds the branch matching the SELECTION CRITERIA buffer contents or takes the NOT FOUND branch. If you select the RANGE match option, the application takes the appropriate case boundary branch for data either less than or equal to the SELECTION CRITERIA buffer contents. Otherwise, the applicator takes the NOT FOUND branch. Note: If you select the RANGE match option, list the cases in the Cases Table in ascending order.
Number of Cases	1	Number of valid cases in the CASE table.

Next cell

Next cell	Explanation
Not Found	The input selection could not be found in the Valid Case table.

Tables

Tables	Explanation
Valid Cases	A list of all valid cases to match the selection criteria, and the next cell corresponding to each case. Valid cases can be any numerical or string constant, or any buffer containing a value.

CDAT - convert data

Description

CDAT converts data from one format to another by allowing you to specify the input format, output format, source buffer, and the destination buffer. Under the Conversion Type header in the pop-up menu, the following options are available:

- DATE
- TIME
- DATE & TIME
- CURRENCY

CDAT is especially useful for converting data gathered from other sources into a format compatible with other cells. For example, if your database has a date field in the format mm/dd/yy, it must be converted to mmddyy for use by the PDAT cell.

CDAT also provides the facility for extracting a single piece of data for use such as the month from the complete date.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Input format		The format in which the data is provided.
Output format		The desired format.
Source Buffer		The name of the buffer where the data is located.
Destination Buffer		The name of the buffer where the converted data should be placed.

Next cell

Next cell	Explanation
Inv Format	The format is invalid for the type.
Error	The value is out of range for the format specified.
Success	The data has been converted to the format specified.

If the source buffer contains the number 0102, the input format is mmdd, the output format is mmm-dd, the conversion type is Date, and the number is converted to jan-02.

If the input format or output format contains characters other than those specified under the following Valid Month Format section, CDAT takes the INVALID FORMAT branch. You should note the following valid input formats:

Valid month formats

m	1–12 output only, unless there are separators
mm	01–12 input, output
mmm	jan, feb, mar, apr, can, jun, jul, aug, sep, oct, nov, dec
mmmm	january, february, march, april, can, june, july, august, september, october, november, december
Mmm	Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
MMM	JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC
Mmmm	January, February, March, April, May, June, July, August, September, October, November, December
MMMM	JANUARY, FEBRUARY, MARCH, APRIL, MAY, JUNE, JULY, AUGUST, SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER

CEND - continuation outdial end

Description

CEND is used in conjunction with a Continuation Outdial (COUT) cell which initiates a secondary telephone call on the current channel. At some point in an application, after COUT initiates a secondary phone call, CEND ends the secondary call and returns to the primary call. It ends the secondary call in one of two ways as determined by the CEND type:

- CEND can simply hang up the secondary call and then return the application to the original caller. This is done if the CEND type is RECONNECT.
- CEND can end the secondary call by connecting the two parties together in a conference call. Note that the two callers remain connected to Meridian IVR. This is done if the CEND is CONFERENCE.

Buffers used

None.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer

Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
CEND Type (Conf/Recon)	CONFERENCE	How should the secondary call be ended? The choices are CONFERENCE and RECONNECT.

Next cell

Next cell	Explanation
Error	The secondary phone call does not exist or could not be ended.
Success	The secondary call has been ended, and the application has returned to the original caller.

Tables

None.

CHEK - check database**Description**

The CHEK cell checks the information database for the existence of a record associated with a particular record number. If the record is found and output buffers are supplied, then the output buffers are filled with data that is stored in the record. (Refer to Chapter 6, “Using information databases,” for further information about information databases.)

Buffers used

The CHEK cell uses the buffer specified by the Record Number parameter.

Buffers updated

The CHEK cell updates the buffers listed in the Output Buffer Table.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Database Name	<NONE>	The name of the information database to be checked. Initially, the database table is empty. It only contains the names of the databases used in the current application. The complete list of available databases is not displayed.
Record Number	DIGITS	The buffer that contains the record location number to be checked in an information database. The buffer can be a system buffer or a user-defined buffer.
Buffer Count (max 10)	0	A count of the number of buffers to hold output information from an information database. This value is updated automatically with the count of buffers once the cell is saved.

Next cell

Next cell	Explanation
Not Found	There was no record in the information database for the specified record number.

Tables

Table	Explanation
Output Buffer Table	The names of the buffers that hold output from the information database.

COMA - host communications abort**Description**

The COMA cell aborts a transaction in progress from a host computer that is connected to Meridian IVR through the Application Processor (AP).

The host computer runs a terminal-based application through the host connectivity products. The Meridian IVR AP replaces the human operator and provides information to the running host application.

The COMA cell places the host application back to a known starting point, and frees up all the memory and buffer tables associated with application data retrieval.

Buffers used

None.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment Field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.

Next cell

Next cell	Explanation
Success	The transaction completed successfully.
Error	An error has occurred, or there is no transaction in progress.

Tables

None.

COMI - host communications, input to host

Description

The COMI cell passes data to a host computer connected to the Meridian IVR Application Processor (AP) and initiates a transaction through the host connectivity products.

The host computer runs a terminal-based application through the Meridian IVR AP. The AP replaces the human operator and provides information for the running host application.

The COMI cell handles all the issues related to sending data to the host computer. It also provides the interface for data from the IVR application.

The COMI cell uses a script that determines the flow of the host application's screens. The script consists of screen and action templates. You must create this script separately with a text editor. The COMI cell also uses a set of buffers to provide input to the screens. You may need to use the COMI cell more than once to provide all the data necessary to complete one transaction. The "More input" flag is used to postpone the execution of the transaction until all input data has been gathered.

Note: Refer to Chapter 4, "Creating a sample application", for information on how to write a script.

Upon receipt of all input buffers, the execution of a COMI cell consists of a host transaction. A transaction is a script that, if followed from beginning to end, defines actions that must be performed. Several screens can be traversed to obtain the desired information. The last step in the transaction is to bring the host program back to a known starting point.

If the script does not specify reset and logout actions, and the mode is set to manual, the communications session is left on the last screen of the virtual terminal session. The next use of a COMI cell in this application starts its script as if it were resuming from that point in the last transaction. This feature allows the IVR application to make decisions affecting the host transaction flow and eliminates the need to start each transaction at the login screen.

Buffers used

None.

Buffers updated

None.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Action Template	None	Name of the action template.
More Input?	No	Will more input buffers be required before the transaction should begin?
Time-out	75	Time-out for host response: value 0–75 seconds.
# Input Buffers	0	Value 0–10

Next cell

Next cell	Explanation
Success	Input data received and/or the transaction began successfully.
Error	An error has occurred; possible cause: unexpected screen found or field not found.

Tables

Table	Explanation
Input Buffer Table	Lists the name of each input buffer.

COMO - host communications, output from host

Description

The COMO cell retrieves data from a host computer connected to the Meridian IVR AP through host connectivity products.

The host computer runs a terminal-based application through the host connectivity products. The Meridian IVR AP replaces a human operator, provides information to the running host program, takes information contained on the screens, and stores this information for future retrieval through the COMO cell.

The COMO cell provides the interface to the IVR application for the host data retrieved by the script. The script is initiated by the COMI cell when it provides a set of buffers to hold output data retrieved from the screens.

If the blocking node is set to Y, then the COMO cell waits for the transaction initiated by the COMI cell to complete. It then returns up to 10 buffers of information to the IVR application, along with a status code indicating the success of the transaction. If the blocking mode is set to N and the transaction is not complete, the COMO cell gets a status code indicating “Not Ready” and executes the Next cell “Not Ready” branch without retrieving any data. If the transaction has completed, up to 10 buffers plus a status code indicating the success of the transaction are then returned to the application. The MIVR AP retains all the information from the last transaction. In future occurrences, the COMO cell will retrieve the next logical sequential data.

The COMO cell retrieves information from a transaction previously initiated through a COMI cell and only waits for completion, if necessary. You can use the asynchronous capabilities provided by this pair of cells to your advantage because they allow interaction with a caller through other cells between these two cells while the transaction is in progress.

Buffers used

None.

Buffers updated

None.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Blocking (y/n)	Yes	Indicates whether or not the COMO cell should wait for a transaction to complete before it transitions to the next cell.
Output Buffers	0	Value 0–10.

Next cell

Next cell	Explanation
Success (End of Data)	The transaction completed successfully.
Success (More Data)	The transaction completed successfully, but there is more data to be retrieved through another COMO cell.
Not Ready	The transaction has not completed yet. It is only valid if blocking is set to n.
Time-out	The time-out value has been exceeded.
Error	An error has occurred; possible cause: unexpected screen found or field not found.

Tables

Table	Explanation
Output Buffer Table	Lists the name of each output buffer.

COMP - compare**Description**

The COMP cell compares the contents of a buffer against either the contents of another buffer or a constant value, and uses the results of the comparison to determine the next cell. Two types of comparison are possible: numerical (for example, comparing two numbers), and string-based.

By using the “Step Flag” parameter, the COMP cell allows you to increment or decrement (that is, increase or decrease by one) the contents of Buffer A after the comparison. This feature is only useful with numeric comparisons. For a string comparison, this feature is meaningless; consequently, the COMP cell ignores the Step Flag parameter for string comparisons.

Buffers used

COMP uses Buffer A and Buffer B.

Buffers updated

Buffer A is updated if the COMP cell uses the Step Flag parameter to decrement or increment its contents, and you set the Type of Comparison parameter to Numeric.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Buffer A	DIGITS	A buffer name which can be a system buffer or a user-defined buffer.
Buffer B	0	A buffer (either a system buffer or a user-defined buffer) or a constant value (maximum size is 29). It is compared with Buffer A. If you specify a constant value in a string comparison, enclose it in quotation marks.

Step Flag	NONE	In a numeric comparison, the flag identifies whether Buffer A should be increased by one, decreased by one, or left unchanged after the comparison. This is ignored in a string comparison.
Type of Comparison	Numeric	The type of comparison to be performed: numeric or string.

Next cell

Next cell	Explanation
A < B	A is less than B.
A > B	A is greater than B.
A = B	A is equal to B.

Tables

None.

Examples

In a string comparison, the result is based on alphanumeric order: 1–10, A–Z. **Table 7-1** illustrates string comparisons the COMP cell performs.

Table 7-1
String compare examples

Contents of Buffer A	Contents of Buffer B	Next cell
"A"	"C"	A < B
"1111"	"21"	B > A
"1ZZ"	"ZZ"	A < B
"MAINE"	"MAINE"	A = B
"STATUS"	"ORDER"	A > B
"ABBOT"	"ABBO"	A > B

Suppose that you want to perform a numeric or string comparison of the contents of the DIGITS buffer against the contents of the NUMBER OF RECORDS buffer. [Table 7-2](#) shows the results.

Table 7-2
Comparison of two buffers

Buffer A = Digits Buffer B = Number of records buffer	
Conditional	Next cell
IF DIGITS < NUMBER OF RECORDS BUFFER	A < B
IF DIGITS = NUMBER OF RECORDS BUFFER	A = B
IF DIGITS > NUMBER OF RECORDS BUFFER	A > B

You can also compare the contents of a buffer against a constant value as illustrated in [Table 7-3](#).

Table 7-3
Comparison of a buffer to a constant

Buffer A = Digits Buffer B = 1	
Conditional	Next cell
If Digits < 1	A < B
If Digits = 1	A = B
If Digits > 1	A > B

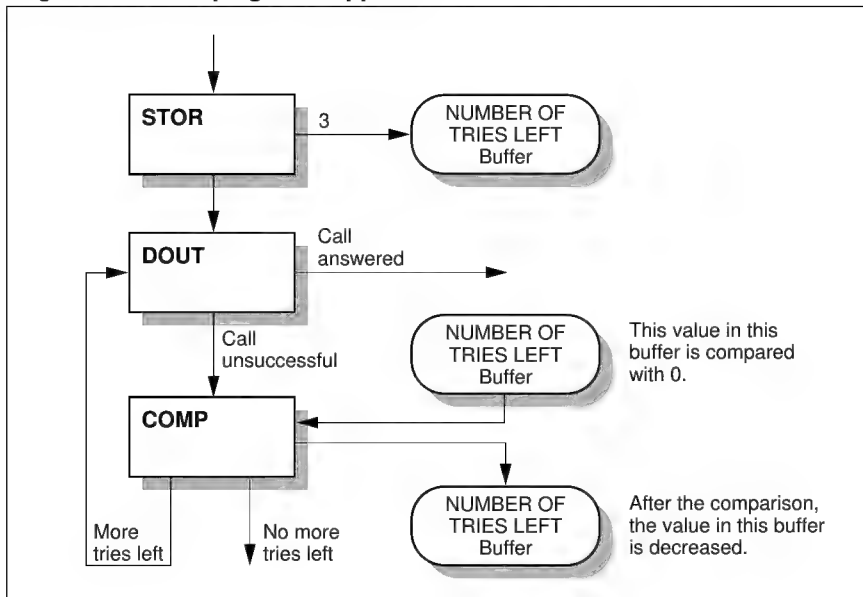
By using the Step Flag parameter in numeric comparisons, you can include a COMP cell in your application to perform a looping function. To use this feature, set the value of the Step Flag parameter to INCREMENT or DECREMENT.

Figure 7-1 illustrates a portion of an application that uses COMP for looping. The application has a DOUT cell that makes an outgoing phone call. It also has a buffer called NUMBER OF TRIES LEFT to indicate how many additional times the application should try to make the call if the first attempt fails. The NUMBER OF TRIES LEFT buffer starts out with a value of 3. The Step Flag parameter in the COMP cell is set to decrement the buffer.

If the DOUT cell is unsuccessful in making the call, the application branches to the COMP cell which compares the NUMBER OF TRIES LEFT buffer with the constant value of 0. If the buffer value is greater than 0, then DOUT tries to make the call again. The COMP cell decrements the value of the buffer, and the application returns to the DOUT cell. Because the application follows a set of branches forming a circular pathway, it is said to “loop” back to the DOUT cell.

The application keeps looping through the DOUT cell to try the call again until the call is answered or until there are no more tries left. If the call is not answered on the first try, the application can make up to three additional attempts because the original value of the NUMBER OF TRIES LEFT buffer is 3.

Figure 7-1
Using COMP for looping in an application



CONC - concatenate buffers

Description

The CONC cell concatenates (joins) two character strings. After concatenation, the destination buffer contains its original contents followed by the source string. The buffer identified by the Destination String Length parameter contains the number of characters in the destination buffer following concatenation.

Buffers used

The CONC cell uses the buffers specified by the Source, Destination Buffer, and Destination String Length parameters.

Buffers updated

The CONC cell updates the buffers specified by the Destination Buffer and Destination String Length parameters.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.

Source (Buffer/Value)	DIGITS	The source string or the buffer that contains the source string. If the source is a string rather than a buffer, you must enclosed it in quotation marks.
Destination Buffer	DIGITS	The buffer to which the source string is appended.
Destination String Length	LENGTH	The length of the string in the Destination Buffer after concatenation. If the error branch is taken, the Destination String Length buffer contains a "0".

Next cell

Next cell	Explanation
Fail	The combined length of the two strings is too long for the Destination Buffer. Each buffer in Meridian IVR can store up to 31 characters.
Success	Concatenation has been successful.

Tables

None.

Examples

Suppose the source is a buffer containing the string 6678437, and the destination is a buffer containing the string 800. After the CONC cell has concatenated the two strings, the destination buffer contains the string 8006678437. The Length buffer contains the value 10. The contents of the source buffer are unchanged.

As another example, suppose the source is the string 2509393 and the destination is a buffer containing the string 508. After the CONC cell has concatenated the two strings, the destination buffer contains the string 5082509393.

COUT - continuation outdial

Description

The COUT cell puts a caller on hold and makes a secondary call by performing an add-on call to the phone number specified by the Phone Number parameter.

After checking for the dial tone, an attempt is made to dial the number. If the number cannot be dialed, the application branches to the Error next cell. If the dialing is successful, it allows a specified maximum number of rings to occur. If this maximum occurs before the called party answers, the call is considered not to have been answered, and the application branches to the Ring next cell. If a busy signal is detected, the application branches to the Busy next cell. Notice that if the application branches to the Error, Ring, or Busy cell, it takes the original caller off hold and continues normally.

If the secondary call is answered, then the application branches to the Answer next cell. The application continues; the original caller remains on hold, and the called party presses telephone keys or performs any of the other activities that the application can require.

Note: CEND must be performed before any prompts or messages.

The application can end the secondary call in one of three ways:

- A CEND cell can hang up or disconnect the secondary call. In this case, the original caller is taken off hold.
- A CEND cell can join the two callers together in a conference call.
- The called party (that is, the person who received the secondary call) can hang up before the application ends the secondary call. In this case, the application takes the error branch of the COUT cell.

COUT is the only cell type in which a return cell can be specified. An error branch is quite different from a next cell. The application goes directly to the return cell any time the recipient of the secondary call hangs up on the call, no matter which cell is being executed at the moment. If you want to play anything to the caller from the error branch, insert a CEND cell with a reconnect option before the PLAY cell.

Buffers used

The COUT cell uses the buffer specified by the Phone Number parameter.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Ring Count (0–31)	0	How many rings to allow before branching to the Ring next cell. Note: If you set this parameter to 0, the application uses the default value of 31 rings.
Phone Number	DIGITS	The buffer containing the phone number to be dialed.

Next cell

Next cell	Explanation
Busy	The called number is busy.
Ring	The ring count has been exceeded.
Error	An error was encountered during the process of dialing the phone number.
No Energy Detect	The secondary call was answered, but no voice energy has been detected. This branch is not supported in this release.
Voice	The secondary call was answered and voice energy has been detected. The secondary call is in progress.

Return cell

Return cell	Explanation
Hang up	The secondary call was answered, and the application branched to the Success next cell of the COUT cell with the secondary call in progress. However, the called party hung up before the application could end the secondary call. The application stops whatever it is doing and goes directly to this Return Cell.

Tables

None.

DDEL - delete information database records

Description

The DDEL cell allows you to delete a record from an information database. The record you specify is deleted from the information database if it is found.

Buffers used

The DDEL cell uses the buffer specified by the record number parameter.

Buffers updated

None.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Database Name	<NONE>	The name of the information database from which records have to be deleted.
Record Number	DIGITS	The buffer that contains the storage location number that has to be deleted from the information database. The buffer can be a system buffer or a user-defined buffer.

Next cell

Next cell	Explanation
Error	The record number could not be deleted.
Not Found	There was no record in the information database for the specified record number.
Success	The record was successfully deleted.

Tables

None.

DELV - schedule a delivery application**Description**

One application uses the DELV cell to schedule another application to start automatically, immediately, or at some time in the future.

The DELV cell originates outgoing phone calls to provide services such as message delivery, pager access, telemarketing, wake-up calls, and reminder calls. The scheduled application is called an event.

Applications scheduled by the DELV cell run on outbound channels only. These applications typically have a DOUT cell early in the call flow to make an outgoing phone call. When the call has been answered, the scheduled application can play prompts to the called party, collect digits from the called party, or perform any of the other standard application activities.

The DELV cell simply makes a request for the application to start at some time in the future. If the request is accepted, the DELV cell takes the success branch to the next cell. Other than the buffers that are passed from the scheduling application to the scheduled application, there is no link between the two applications. The scheduled application begins at the appropriate time, often long after the scheduling application has finished.

The DELV cell contains several options and features to increase the flexibility of this very useful cell. Since a typical use of the DELV cell is to have a call placed at a specific time to play a message, there are parameters for specifying the outdial number, delivery time, and message number.

You can schedule an application more than once. There are parameters that help you reschedule the application. There are two basic reasons for rescheduling:

- Some applications, such as those that deliver wake-up calls, are intended to be run daily at a specific time. For this reason, you select an automatic rescheduling feature with the Time Type parameter.
- An outdial can be unsuccessful because the line is busy or the call is not answered. You can want it to try again. For this reason, the DOUT cell in the delivery application can have error branches leading to a DELV cell so that the application can reschedule itself. This procedure is called manual rescheduling. There are parameters called Delivery Interval (for the length of time until the next scheduled delivery) and Delivery Attempts that the delivered application can use in rescheduling itself. The application typically decrements the Delivery Attempts parameter each time you run the application. When the number of delivery attempts reaches zero, the application no longer reschedules itself.

Since Meridian IVR can have a long schedule of future events, it returns a unique identifier to the DELV cell whenever an application is scheduled, and stores it in the buffer specified by the Delivery Event ID parameter.

It is often useful to pass additional pieces of information to a scheduled application—for example, another message or a second phone number. For this purpose, the DELV cell passes the system buffers—DATA EXCHANGE numbers 1–5, to the scheduled application. What they contain and how their contents are to be interpreted are entirely up to you. The DELV cell itself does not store any information in these buffers, so the application must put information into them before the DELV cell is executed.

A more detailed discussion of the individual parameters of the DELV cell follows.

Application Name

Specifies either the *name* of the application (without the .vpf extension) to be scheduled or a buffer containing the name. You must load and start the scheduled application by the delivery time. See the *Meridian IVR System Administration Guide* (NTP 555-9001-300) for instructions on loading applications and for information on outbound channels. Since the application is automatically assigned an available outbound channel by Meridian IVR at a scheduled time, the system administrator does not need to assign any channels to the application. However, you must start the application.

Outdial Number

Specifies a buffer containing the phone number that the scheduled application calls. This buffer is passed to the scheduled application.

Time Type

Determines the manner in which the schedule is calculated.

- If the Time Type is ABSOLUTE, the application runs at a specific date and time. The DELV cell uses the Delivery Time parameter to calculate delivery time.
- If the Time Type is RELATIVE, the application runs a certain length of time from the moment the DELV cell is executed. The DELV cell uses the Delivery Interval parameter to calculate delivery time.
- If the Time Type is RESCHEDULE, the application automatically runs at intervals specified by the Reschedule Interval parameter, starting with the date and time specified by the Delivery Time parameter. The DELV cell uses the Delivery Time and Reschedule Interval parameters to calculate delivery time.

Delivery Time

Selects the buffer that specifies the time when the scheduled application should run. The format for the delivery time is as follows: *mmddyyyymm* (2 digits for month, 2 digits for day, 4 digits for year, 2 digits for hour, and 2 digits for minutes—12 digits altogether in a 24-hour format.)

Delivery Interval

Specifies the length of time in minutes until the next scheduled delivery of the application. This is used by the DELV cell only when the Delivery Time parameter is set to RELATIVE. For the other Delivery Time types, the DELV cell itself does not use this parameter; however, if the Delivery Interval parameter specifies a buffer, other cells in the application can use that buffer.

Delivery Attempts

Is passed to the scheduled application and placed in the Delivery Attempts buffer. This parameter specifies information that the scheduled application can use to determine whether it should reschedule itself, in case the call is not successful. It is important to note that this field is not used by the DELV cell itself, nor does it automatically cause the application to be rescheduled. Typically, the scheduled application has cells that use the Delivery Interval and Delivery Attempts parameters to determine whether it should reschedule itself. For example, a scheduled application could use a COMP cell to determine whether it should take a branch to a DELV cell.

Delivery Handle

Can specify a message number to be passed to the scheduled application and placed in the Current Message buffer. The scheduled application could use a Play Message (PMSG) cell to play the message to the called party.

Delivery Event ID

Receives the identifier for the scheduled event. If you later decide to unschedule this event with an unschedule delivery (UDLV) cell, you must use this ID number. (See the description of the UDLV cell type.) It can be helpful for the application to use a play prompt with the data (PDAT) cell to play the delivery event ID to the caller so the caller can make a note of it.

Reschedule Interval

Used by the DELV cell only when the Time Type is RESCHEDULE. It tells Meridian IVR how many days to allow between automatically rescheduled deliveries. Automatically rescheduled events occur at the Delivery Time every Reschedule Interval number of days. It is possible to reschedule events up to seven days apart.

Buffers used

DEL V uses the buffers specified by the following parameters:

Buffer	Explanation
Application Name	The application to be scheduled.
Outdial Number	Passed to the scheduled application and stored in its DIGITS buffer.
Delivery Time	Passed to the scheduled application and stored in its DELIVERY TIME buffer.
Delivery Interval	Passed to the scheduled application and stored in its DELIVERY INTERVAL buffer.
Delivery Attempts	Passed to the scheduled application and stored in its DELIVERY ATTEMPTS buffer.
Delivery Handle	Passed to the scheduled application and stored in its CURRENT MESSAGE buffer.

Buffers updated

The DEL V cell updates the buffer specified by the Delivery Event ID parameter.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer

Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Application Name (Buffer or Value)	4479	The name of the application to be scheduled. You can specify the actual name of the application between quotation marks (do not include the .vpf extension), or a buffer that contains the name of the application.
Outdial Number	DIGITS	The buffer containing the number to be outdialed by the scheduled application. This buffer is passed to the scheduled application as the DIGITS buffer.
Time Type (ABS/REL/ RESCHEDULE)	ABSOLUTE	Should the application be scheduled for one delivery at a specific date and time (ABSOLUTE), should it be scheduled for one delivery a certain length of time from the present (RELATIVE), or should it be scheduled for repeated delivery at specified intervals (RESCHEDULE)?
Delivery Time	DELIVERY TIME	The buffer that stores the delivery date and time. This buffer is passed to the scheduled application as the DELIVERY TIME buffer.
Delivery Interval (Buffer or Value)	DELIVERY INTERVAL	The length of time in minutes between execution of the DELV cell and execution of the application. It is required only if the Time Type is RELATIVE. This parameter is passed to the scheduled application and stored in the DELIVERY INTERVAL buffer.

Reschedule Interval (Value)	1	The time in days between each scheduled delivery. The value of this parameter can be 1–7. It is required only if the Time Type is RESCHEDULE.
Delivery Attempts (Buffer or Value)	DELIVERY ATTEMPTS	The maximum number of delivery attempts to make. The DELV cell does not use this information directly; it is passed to the scheduled application and stored in the DELIVERY ATTEMPTS buffer.
Delivery Handle	CURRENT MESSAGE	A buffer containing a message number to be passed to the scheduled application and stored in the CURRENT MESSAGE buffer.
Delivery Event ID	DELIVERY EVENT ID	The buffer that is updated with the Delivery Event ID number.

Next cell

Next cell	Explanation
Fail	The application could not be scheduled.
Success	The application has been scheduled.

Tables

None.

DIAL - dial digits

Description

The DIAL cell dials a series of DTMF digits on the current channel while a call is already in progress. This cell type does not outdial, but it can be used to dial digits to an external device such as a paging terminal.

Buffers used

The DIAL cell uses the buffer specified by the Phone Number parameter.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Phone Number	DIGITS	The buffer containing the digits to be dialed. Can be a system buffer or a user-defined buffer.

Next cell

Next cell	Explanation
Error	The digits could not be dialed.
Success	The digits were dialed.

Tables

None.

DINS - insert records into an information database**Description**

The DINS cell allows you to insert a record into an information database.

Buffers used

The DINS cell uses the buffer specified by the Record Number parameter.

Buffers updated

None.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.

Parameters	Initial value	Explanation
Database Name	<NONE>	The name of the information database from which records have to be inserted.
Record Number	DIGITS	The buffer that contains the storage location number that has to be inserted from the information database. The buffer can be a system buffer or a user-defined buffer.

Next cell

Next cell	Explanation
Error	The record number could not be inserted.
Record Exists	The record number already exists.
Success	The insertion of the record was successful.

Tables

None.

DMSG - delete message**Description**

The DMSG cell removes messages from the Meridian IVR mailboxes where they are stored. The DMSG cell operates on the current message. If the message has just been recorded with the RMSG cell, the message is already in the CURRENT MESSAGE buffer.

Buffers used

Buffer	Explanation
CURRENT MESSAGE	The number of the message to be deleted.

Buffers updated

None.

Parameters

Parameter	Initial Value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.

Next cell

Next cell	Explanation
No Delete	The message cannot be deleted or the message does not exist.
Success	The message has been deleted.

Tables

None.

DOUT - directed outdial

Description

DOUT makes an outgoing telephone call on the current channel. Since DOUT places a call on the current channel, you cannot use this cell in applications that answer incoming calls. DOUT typically performs message delivery applications.

Note: DOUT requires the use of an output channel. See the *Meridian IVR System Administration Guide* (NTP 555-9001-300) for a description of outbound channels.

After checking for a dial tone, an attempt is made to dial the number. If the number cannot be dialed, the application branches to the Error next cell. If the dialing is successful, it allows a specified maximum number of rings to occur. If this maximum occurs before the called party answers, the call is considered not to have been answered, and the application branches to the Ring next cell. If a busy signal is detected, the application branches to the Busy next cell.

If the call is answered, the application branches to the Success next cell.

Note: DOUT has a parameter called “Ring Count.” For customers in the United States and Canada, “Ring Count” specifies the maximum number of rings. For customers outside the United States and Canada, “Ring Count” specifies the maximum number of tone bursts which is twice the number of rings.

Buffers used

The DOUT cell uses the buffer specified by the Phone Number parameter.

Buffers updated

STATUS.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Ring Count (0–31)	0	The number of rings allowed before branching to the Ring next cell. Note: If you set this parameter to 0, the application uses the default value of 31 rings.
Phone Number	DIGITS	The buffer containing the digits to be dialed. Can be a system buffer or a user-defined buffer.

Next cell

Next cell	Explanation
Error	Any other error has occurred.
Busy	The called number is busy.
Ring	The ring count has been reached without an error.

No Energy Detect	The secondary call was answered, but no voice energy has been detected. This branch is not supported for this release.
Voice	The call has been answered, and voice energy has been detected.

Tables

None.

EVENT - log application event**Description**

The EVENT cell logs application-specific information at arbitrary points within a callflow as directed by the application writer. The EVENT cell automatically logs information such as date and time of event, application name, and a set of user-specified buffers containing application-specific information.

For each cell that uses an EVENT cell, two types of information are logged:

- data specific to the call
- data specific to each EVENT cell encountered

You can turn off the auditing capabilities of the EVENT cell without removing the cell by means of the “sconfig tool”.

To invoke sconfig, enter:

sconfig -audit [on off]

You must reset Meridian IVR 2.0/I for changes made by sconfig to take effect.

The information collected for the call includes the following:

- application name
- ANI
- channel number
- AP number
- trunk number
- start date and time
- stop date and time
- number of EVENT cells logged (up to 2 kbytes of data)

The information collected for each execution of an EVENT cell includes the following:

- application name (for GSUBs and EXECs)
- cell name
- cell number
- contents of comment field
- number of buffers to log (up to five)
- contents of these buffers (logs the values placed in these buffers by previous cells)
- date and time the cell execution completed

Note: Meridian IVR 2.0/I can log only 2048 bytes of call statistics for a single call (including call statistics logged by EVENT cells, and cells with CALL AUDITING enabled) to the audit_stat.d statistics file according to the following formula:

$$[(13 + (\text{string length of buffers})) * \text{the number of cells audited}] 2048.$$

If this occurs, the system logs an error into the event log stating that the 2048-byte limit was exceeded and any further call statistics will be lost.

For each cell that is audited (using either the EVENT cell of Call Audit Enabled parameter or any other cell), the amount of data collected per audited cell is the following:

13 bytes + [number of characters +1 for each buffer specified (up to 5 buffers in the EVENT cell, or 1 representing the Audit Information parameter in any other cell)].

Buffers used

None.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Number of Event Buffers (0–5)	0	Number of buffers that contain event-specific information.

Next cell

Next cell	Explanation
Success	The event was successfully logged.

Tables

Tables	Explanation
Event Buffer Table	The buffers containing event specific information.

Note: The data collected by the EVENT cell is also collected by every cell in the application call flow which has the parameter “Call audit enabled?” set to Yes.

Data collected by the EVENT cell is not sent to the audit_stat.d statistics file if there are no cells connected to the cleanup branch of the START cell.

All data is written to the file stat.d/audit_stat.d. You can convert this data to ASCII by means of the “exp” tool.

EXEC - execute application

Description

The EXEC cell tells Meridian IVR to begin executing another application on the current channel. This cell makes it possible to break a large application into several smaller ones. When a call is received, it can be handled by an application that determines which of several other applications should take the call. An EXEC cell can then turn the call over to the appropriate application.

Note: When Application A does an EXEC of Application B, Application B should not use the ANSW cell because Application B is not answering the call. Application B only continues where Application A left off.

If the EXEC cell fails, the cleanup handler for a particular application is not executed.

If Meridian IVR is able to start the other application, control of the call is turned over to that application and the current application stops running. If Meridian IVR is unable to start the other application, the current application branches to the Error next cell.

The name of the application to be executed is taken from a buffer. You can use a STOR cell to put the filename into a buffer that makes the filename available to the EXEC cell. The filename must be placed in quotation marks. In addition, the .vpf extension, which is added to a filename by Meridian IVR, must be removed. For example, if you want to start the application named filename.vpf, you can use STOR to place the file “filename” into the buffer.

When the new application starts, the current application passes the values of all its system buffers to the new application. The values of its user-defined buffers are not passed to the new application; therefore, you should use only system buffers to store values which the new application will use.

Note: EXEC cannot start the new application unless you load it. See the *Meridian IVR System Administration Guide* (NTP 555-9001-300) for information on loading and starting applications.

Buffers used

The EXEC cell uses the buffer specified by the Application Name Buffer parameter.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer

Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Application Name	DIGITS	The buffer containing the name of the application to be executed. It can be a system buffer or a user-defined buffer.

Next cell

Next cell	Explanation
Error	The other application could not be started. This is the only branch.

Tables

None.

GDAT - play prompts and get data**Description**

The GDAT cell plays one or more prompts and collects up to 16 digits of input from the caller. Input is in the form of Dual Tone Multiple Frequency (DTMF) digits that the caller enters by pressing telephone keys.

The caller can enter digits during or after playback of the prompts. The Input Digit Buffer parameter designates the buffer that stores the caller's input.

The GDAT cell has two parameters to limit the time the caller has for entering input:

- **Input Time-out** Sets the time limit for entering all of the digits.
- **Interdigit Time-out** Limits the time between entering one digit and the next. It also limits the time for entering the first digit.

If either of these time-out values is exceeded, the input is considered invalid and a time-out occurs. The caller hears the time-out prompt.

Digit entry ends when the caller has either entered the number of digits indicated by the Input Length parameter, or pressed the termination digit (usually the # symbol; see the Default Cell screen). If the caller does either of these things within the time limits, the input is considered valid.

If the caller hangs up instead of entering digits, the GDAT cell does not recognize the hang up and the clean-up branch is not taken. Only cells that play a prompt, such as the MENU cell and the PLAY cell, recognize the hang up and take the clean-up branch. Therefore, if you use a GDAT cell, include cells that check the number of digits in your application. This way, if a caller hangs up, these cells recognize the hang-up and route it to the HANG cell.

The GDAT cell has a retry feature that allows the caller to try again after a time-out. You choose the maximum number of time-out retries. If the caller exceeds this maximum, the application branches to the Time-out next cell.

The Abort Play on Input parameter controls what happens if the caller tries to enter input while a prompt is playing. If this parameter is set to Yes, a caller who is familiar with the application can skip through the prompts by pressing digits that the application is going to request.

Note: The prompts stop playing once digit entry ends.

The Allow Overdialing parameter determines whether input is buffered from one cell to another. For example, if there are two cells that require a single digit of input, and if the Allow Overdialing parameter is set to Yes, the caller can press these digits in quick succession, and the second digit is saved until the second cell needs it. If the Abort Play on Input parameter is also set to Yes, the caller does not even hear the prompt for the second cell.

The GDAT cell includes the Term. Digit Buffer parameter for capturing the digit (if any) that the caller enters to terminate the string of digits they enter. The default buffer that is updated is the Termination Digit Buffer. This feature of the GDAT cell can be useful with successive PDAT or COMP cells. A PDAT cell with the Data Type parameter set to ALPHANUMERIC can play back the contents of the buffer specified in the GDAT cell's Termination Digit Buffer parameter. A COMP cell can determine whether the terminating digit captured by the GDAT cell is a “#” or “*”.

Note: The # and * characters are always termination digits.

Buffers used

None.

Buffers updated

The GDAT cell updates the buffers specified by the Input Digit Buffer, # of Digits Input, and Termination Digit Buffer parameters.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Input Length (max 16)	1	The number of digits to accept from the caller.
Input time-out (0–75 secs)	15	The time in seconds in which the caller must enter all digits. If this value is exceeded, a time-out occurs. Setting this parameter to 0 sets the time allowed for entering digits to the time it takes to play all of the prompts specified in the Play Prompt Table.

Interdigit time-out (0–15 secs)	5	The maximum time that can elapse between entry of one digit and the next. It is also the maximum time for entry of the first digit. If this time is exceeded, than a time-out occurs. A value of 0 means that there is no limit.
Time-out Prompt	56	The number of the prompt that the caller will hear after a time-out occurs. The initial value, prompt 56, says “That is an invalid response.”
Number of Time-out Retries	3	The number of times the caller can try again after a time-out.
Abort Play on Input? (Y/N)	YES	Should the playback be aborted if the caller completes input entry during playback?
Allow Overdialing? (Y/N)	NO	Are digits allowed to accumulate from one cell to the next?
Input Digit	DIGITS	The buffer that accepts the caller's input. It can be a system buffer or a user-defined buffer.
# of Digits Input	NUMBER OF DIGITS	The buffer that stores the number of digits that have been accepted from the caller. It can be a system buffer or a user-defined buffer.

Term. Digit Buffer	TERMINATION DIGITS	The buffer that captures the # or * termination digit (if any) that terminates the string of digits entered by the caller. Note: If you set the termination to NONE in the Default cell, the * and # keys still act as termination digits. For example, if you enter *76 or #76 in the GDAT cell, the cell terminates on the * key, and no digits are collected.
Number of Prompts (max 32)	1	This value is updated automatically once the cell is saved with the count of the number of prompts entered in the Prompt Table. Note: If a buffer instead of a value is entered, then the value in the buffer indicates the number of prompts to play when the cell is executed in an application.

Next cell

Next cell	Explanation
Error	One or more of the prompts listed in the Play Prompt Table does not exist.
Time-out	The Number of time-out Retries has been exceeded.
Success	The prompts were played and input was collected from the caller.

Tables

Table	Explanation
Play Prompt Table	The prompts played to the caller. This can be specified as prompt numbers or as buffer names.

GSUB - call a subapplication

Description

The GSUB cell tells Meridian IVR to redirect execution to a new cell in either the current application or another application. If the GSUB cell calls a different application, execution starts with the first cell of the new application. When a RETN cell is executed, Meridian IVR transfers control to the Next cell - Success branch of the GSUB cell.

When Meridian IVR branches to the subroutine, the system buffers retain their current contents and are available in the called application. When the subroutine exists within the current application, the contents of any user buffer can be changed by the called application when control transfers back to the Next cell - Success of the GSUB cell from the calling application.

When the subroutine exists within another application, only the system buffers are passed. Any changes made to the system buffers in the called application affect the ones in the calling application. The called application's user buffers are completely internal and cannot be read or written by the calling application. The calling application's user buffers are not affected.

Notes:

- 1** You must load and start the application called by GSUB. You do not need to assign channels. Only system buffers are passed.
- 2** Do not use more than 12 levels of GSUB nesting. Exceeding this limit may cause unexpected results when you run your application.

Buffers used

The GSUB cell uses the buffer specified in the Application Name parameter. System buffers can change during processing of the subapplication (for example, between the GSUB and RETN cells).

Buffers updated

None. System buffers retain their contents at the start of the subapplication. However, buffers that are changed between the GSUB and the RETN cells retain these changes after the RETN cell is executed. The value inside the system buffer reflects the outcome of whatever operation occurs during the subapplication. Any user buffer's contents in the application containing the GSUB cell are saved prior to the start of the subapplication and later restored after the RETN cell is executed. The value inside the user buffer remains the same and is unaffected by the subapplication. If the GSUB branches within the current application, user-defined buffer values are treated as system buffers, and their values can be altered upon RETN.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Application Name (Buffer or Value)	⁶⁴⁵⁹	The name of the application to begin executing. If a value, the application name should be in quotation marks. If the subroutine is within the current application, you simply specify a blank string ⁶⁴⁵⁹ .

Next cell

Next cell	Explanation
Error	The operation was not successful. No such application is currently loaded.
Success	The operation was successful. This is where execution resumes after the RETN cell is executed.
GSUB	This appears if there is an internal subroutine with no application name specified.

Tables

None.

HANG - hang up**Description**

The HANG cell the call on the current channel. There is an option to play prompts to the caller before hanging up the channel.

Buffers used

None.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Number of Prompts (max 5)	0	This value is updated automatically once the cell is saved with the count of the number of prompts entered in the Prompt Table. Note: If a buffer instead of a value is entered, then the value in the buffer indicates the number of prompts to play when the cell is executed in an application.

Next cell

None.

Tables

Table	Explanation
Play Prompt Table	The prompts played to the caller. The table can be specified as prompt numbers or as buffer names.

INFO - get call information**Description**

You can use the INFO cell for an application that requires detailed information on either incoming or outgoing calls. For example, an application that successfully executes a COUT cell can call an INFO cell to determine the address of the agent that answered the call in a call center environment.

Cell type

Call Management.

Buffers used

None.

Buffers updated

Upon a call to the INFO cell, the Calling DN (DN of caller) ID returned in the ANI_DIGITS buffer and the Called DN (DN dialed by caller) is returned in the DIGITS buffer.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Call State	DATA EXCHANGE #1	Last Call Progress State change
Call Info	DATA EXCHANGE #2	Last Call Info State change
Called TN	DATA EXCHANGE #3	Called TN in Packed Format. The Called TN is 4 bytes of numeric data which are the actual SL-1 physical address of the set. This field is only set for internal calls that have been answered. m_GetCallInfo returns the TN information in the Meridian 1 internal format. This format can be converted to the TN of the agent's set using the following algorithm: TN (packed format) = $\{TN[0] * 256^3 + TN[1] * 256^2 + TN[2] * 256 + TN[3]\}$
Call ID	DATA EXCHANGE #4	Unique Call Identified

Call DNIS	DATA EXCHANGE #5	Directory Number Identification System
Channel ID	DATA EXCHANGE #6	Voice Channel Identifier

Next cell

Next cell	Explanation
Error	The Call Information was not returned.
Success	The Call Information was returned successfully.

Tables

None.

LANG - set language**Description**

The LANG cell sets the offset for system and application-specific prompts, and associates that offset with a particular language. You can use this cell to avoid the occurrence of conflicting prompts from different applications.

The LANG cell allows you to specify a base prompt number for system prompts and a separate base prompt number for application prompts. As prompt IDs are used throughout the application, the appropriate offset is applied.

The PDAT cell uses the Language parameter. The value for this parameter determines the syntax used for speaking numbers, dates and so on.

The Vocabulary Group parameter lists those groups with common vocabularies. You can enter this value directly into the text field. Meridian IVR validates this list against the list specified by the field for the Vocabulary Group browser and warns of invalid values.

Predefined system prompts range from 0 to 999. If you want to support multiple languages, the system prompt range is enlarged by 1000 prompts for every language supported. For example, if you support English, French, Spanish and German you need $(4 \times 1000) = 4000$ prompts. You can lay out the prompt on the disk in the following manner:

0–999	English system prompts
1000–1999	French system prompts
2000–2999	Spanish system prompts
3000–3999	German system prompts

You can also have multilingual application prompts. For example, you can map these prompts in the following manner:

4000–4999	English application prompts
5000–5999	French application prompts
6000–6999	Spanish application prompts
7000–7999	German application prompts

Once you place the prompts on Meridian Mail, you can program the application to support these languages. A MENU cell allows the caller to execute the application in whatever language they choose. Each branch of the MENU cell goes to the LANG cell that loads the value of the offset on the disk where the system prompts start (English=0, French=1000, Spanish=2000, German=3000), where the application prompts start (English=4000, French=5000, Spanish=6000, German=7000), and the language ID which is used to format data played through the PDAT cell.

You record the prompts needed to support the additional character sets using the procedure for recording application prompts. The offset to the first such prompt is specified in the field “ISO-8859/1 Offset” in the LANG cell. For example, if the application prompts start at 500 and ISO-8859/1 prompts are stored in the range 564 to 660, set the field “ISO-8859/1 Offset” to 64. Set this value only once in the application, regardless of the number of PDAT cells. Using the LANG cell enables multilingual systems to connect to the host. Functionality for the multiple-character set is incorporated into the PDAT cell by the data type STRING.

To support the ISO-8859/1 character set, you must record 96 additional prompts in the sequence defined by the ISO-8859/1 character set. Once recorded, store these prompts in the range of application prompts (that is, not in the range of system prompts). This procedure enables you to record and store the prompts only when the multiple-character set is needed. If you store these prompts in the range of system prompts, then you cannot use the 96 corresponding prompt numbers when communicating with a non-ASCII character host.

International Host Connectivity

Meridian IVR currently supports connectivity to hosts that use ASCII character sets. To support international host connectivity, the MIVR 2.06 release extends connectivity to hosts that use non-ASCII 8-bit character sets: namely, EBCDIC and ISO-8859/1. This feature enables applications to send and receive data from the host. In addition, the data retrieved from the host at run time is represented in ISO-8859/1 (that is, ASCII 8-bit character set) regardless of the character set of the host. You can use the buffer data with any other cell.

Database Support

Local databases supported by Meridian IVR store information in ISO-8859/1 character representation (that is, non-ASCII character sets) regardless of the type of character set of the host. As a result, data from both within the database and data in the runtime components is represented in one character set only. Since runtime data uses ISO-8859/1 character representation, applications can store and update the local database using the same character set. You must ensure that data in the local database is in ISO-8859/1 format.

Procedure 7-1

Relocating application prompts

- 1 With the MVPMT tool, copy the prompts to the new location.

Refer to the "Tools" chapter in the *System Administration Guide* (NTP 555-9001-300) for more information about the MVPMT tool.
- 2 Add the LANG cell to your application anywhere before the first cell that references your application prompts.
- 3 Specify the amount that the application prompts have been moved in the field application offset, that is, the application prompt was moved to prompt location 300. The application offset field of the LANG cell contains the difference between the location specified in the application and the new location which is $300 - 200 = 100$.

To use the LANG cell for multilingual purposes, do the following:

- If your application supports multiple languages, the system prompts field of the LANG cell is updated with the offset where the system prompts of a particular language are stored on Meridian Mail. For example, if the French prompts on Meridian Mail started at prompt 500, enter 500 into the System Prompts field of the LANG cell.
- If your application supports application prompts for multiple languages, the application prompts field of the LANG cell is updated with the offset where the application prompts of a particular language are stored on Meridian Mail. For example, if the French application prompts on Meridian Mail started at prompt 1500, enter 1500 into the application prompts field of the LANG cell.
- To provide multilingual formatting of data in the PDAT cell, the language field of the LANG cell is updated. For example, if you want the formatting of data to be in French, specify FRENCH in the language field of the LANG cell.

Note: All applications should contain a LANG cell in case you need to relocate prompts. This way, only the LANG cell is affected. The LANG cell values are preserved in any application that calls subroutines or executes with the EXEC cell.

Buffers used

None.

Buffers updated

None.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
System Prompts	0	Buffer or value: Offset to be added to the application prompts to determine the actual prompt to play.
Application Prompts	0	Buffer or value: Offset to be added to the application prompts to determine the actual prompt to play.
ISO-8859/1 Prompts	0	This value specifies the offset of the first ISO-8859/1 prompt. For example, if the application prompts start at 500, and the ISO-8859/1 prompts are stored in the range 564 to 660, the offset value for the first ISO-8859/1 prompt is 64.

Parameters	Initial value	Explanation
Language	English	Buffer or value to be used to determine proper syntax for PDAT data.
Vocabulary Group Name	"NONE"	Name associated with a group of vocabularies. The list of possible choices is generated from the vocabulary system file.

Next cell

Next cell	Explanation
Success	Language properly defined with valid offsets.
Error	An error has occurred; possible cause is that offset is not within the allowed range.

Tables

None.

LDLV - get schedule event list**Description**

The LDLV cell retrieves information associated with a delivery application that has been scheduled by a Schedule a Delivery Application (DELV) cell. Given the application name and the outdial number, LDLV retrieves the following items:

- the delivery event ID
(LDLV puts this into the specified buffer.)
- the message number associated with the scheduled application
(LDLV puts this into the specified buffer.)
- the buffers DATA EXCHANGE #1, DATA EXCHANGE #2, DATA EXCHANGE #3, DATA EXCHANGE #4, and DATA EXCHANGE #5

You can use one LDLV cell repeatedly in an application to retrieve information about every scheduled event for the specified application and out-dial number. Because there can be several such events, you may need to check each one by having the application use a PMSG cell to play the retrieved message and five PDAT cells to play the contents of the DATA EXCHANGE buffers.

Buffers used

LDLV uses the buffers specified by the Application Name and Outdial Number Buffer parameters.

The DATA EXCHANGE buffers (1–5) are used in the DELV cell to pass data to the application being scheduled in the DELV cell. The LDLV cell only retrieves the contents of those buffers.

Buffers updated

LDLV updates the buffers specified by the Delivery Handle and Schedule Event ID parameters. It also retrieves the DATA EXCHANGE #1, DATA EXCHANGE #2, DATA EXCHANGE #3, DATA EXCHANGE #4, and DATA EXCHANGE #5 buffers.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.

Application Name (Buffer or Value)	""	The scheduled application. You can specify the actual name (without the extension) of the application in quotes, or in a buffer that contains the name of the application. This is a mandatory field.
Outdial Number	DIGITS	The phone number that the scheduled application is set to call. This is a mandatory field.
Delivery Handle	CURRENT MESSAGE	The buffer containing the message number to be passed to the scheduled application.
Schedule Event ID	DELIVERY EVENT ID	The buffer that stores the ID of the scheduled application. If you decide to unschedule the application with a UDLV cell, you have to use this ID. A STOR cell should be used immediately prior to the LDLV cell to set the Event ID to 0. Any other value will cause the cell to retrieve the wrong Event ID associated with that scheduled application. Note: The Schedule Event ID must be set to zero for the whole list of events to be searched.

Next cell

Next cell	Explanation
Fail	An error has occurred.
No Events	There are no more scheduled events with the specified application name and out-dial number.
Success	Information about the scheduled event has been retrieved.

Tables

None.

MATH - perform mathematical operation**Description**

The MATH cell performs the following mathematical operations: addition, subtraction, multiplication, division, and producing a remainder. The math operation identified by the Operation Flag is performed on two operands that are buffers or constant values. The result of the operation is stored in the Result Buffer.

The MATH cell indicates what its highest and lowest possible values are. This cell warns you of inconsistent values greater than the maximum value or lower than the minimum value. The MATH cell only takes an error branch when a division by zero is performed.

You can use the MATH cell only with numerical value results or those represented as buffers or constants. If one of the operands is a character string, the MATH cell takes the error branch. Only integer results are possible; consequently, when the operation is division, only the whole number part is stored in the Result Buffer. If the result of the operation is greater than 2,147,483,647 or less than -2,147,483,648, inconsistent results are returned.

Buffers used

MATH uses Buffer A and Buffer B.

Buffers updated

Result Buffer is updated with the result of the math operation.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Buffer A (or Value)	DIGITS	The first operand. This can be a buffer (either a system buffer or a user-defined buffer) or a constant value (maximum number of 2,147,483,647 and minimum number of -2,147,483,648).
Operation Flag (+, -, *, %)	+	The operation to be performed.
Buffer B (Or Value)	0	The second operand. This can be a buffer (either a system buffer or a user-defined buffer) or a constant value (maximum number of 2,147,483,647 and minimum number of -2,147,483,648).
Result Buffer	DIGITS	A buffer in which the result of the mathematical operation is stored. This can be a system buffer or a user-defined buffer.

Next cell

Next cell	Explanation
Error	The operation was not successful.
Success	The operation was successful.

Tables

None.

MDTE - get Meridian Mail date and time**Description**

The MDTE cell obtains the date and time as set in the Meridian Mail machine (through the use of the Meridian ACCESS API `m_GetSysDate`). The returned date and time are those of the Meridian Mail machine's general system clock. The returned date is used as the time stamp on all files and the reference point for delayed message delivery. The Current Date parameter contains the date in the format MMDDYYYY.

Cell type

Application Scheduling.

Buffers used

None.

Buffers updated

The MDTE cell updates the buffers specified by the Current Time and Current Date parameters.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Current Date	DATE	The buffer containing the current MM date.
Current Time	TIME	The buffer containing the current MM time.

Next cell

Next cell	Explanation.
Error	The MM date and time were not returned.
Success	The MM date and time were returned successfully.

Tables

None.

MENU - play menu and get data

Description

The MENU cell plays a menu to the caller, accepts the caller's menu selection, checks the Valid Input Table to find the next cell corresponding to the selection, and then branches to the next cell. The menu selection must be a single digit that the caller enters by pressing a telephone key. If the menu selection cannot be found in the Valid Input Table, the application branches to the Invalid Input next cell. If the caller does not enter a digit within the time limit set by the Input Time-out parameter, a time-out occurs and the caller hears the invalid input prompt.

The MENU cell has a feature that allows the caller to try again after entering invalid input. The # of Invalid Input Retries parameter determines the maximum number of times that the caller can enter invalid input. If the caller exceeds the maximum number of invalid input retries, the application branches to the Invalid Input next cell.

The Abort Play On Input parameter controls what happens if the caller tries to enter input while a prompt is playing. If this parameter is set to Yes, a caller who knows the application can skip through the prompts by pressing digits that the application is going to request. In addition, the caller does not hear the prompt for the second cell.

The Allow Overdialing parameter determines whether input is buffered from one cell to another. For example, if there are two cells that both require a single digit of input, and if the Allow Overdialing parameter is set to Yes, the caller can press these digits in quick succession and the second digit is saved until the second cell needs it.

The Interdigit timeout value parameter specified in the START cell is used to limit the time to press the first digit in the input to be entered, and the time between each digit in the input. In the START cell, you should set this parameter to five seconds. If this time is exceeded without a resource becoming available, the error branch is taken. Note that the Interdigit timeout value in the START cell cannot exceed the Input timeout value specified in the MENU cell.

Buffers used

None.

Buffers updated

Buffer	Explanation
DIGITS	The digit obtained from the caller.
NUMBER OF DIGITS	The number of digits obtained from the caller. For MENU, the number of digits is always 1.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Valid Inputs	0	Valid inputs include the following: Single digits 0–9 Special characters * and # Letters A, B, C, D.
Invalid Input Prompt	56	The prompt the caller hears after entering invalid input. The initial value, prompt 56, says, “That is an invalid response.”

Number of Invalid Input Retries	3	The maximum number of times the caller can enter invalid input and incur a time-out before the application branches to the time-out next cell.
Time-out Prompt	56	The number of the prompt that the caller hears after a time-out occurs. The initial value, prompt 56, says, "That is an invalid response."
Input Time-out (0–75 secs)	15	The time in seconds in which the caller must enter all digits. If this value is exceeded, a time-out occurs. Setting this parameter to 0 sets the time allowed for entering digits to the time it takes to play all of the prompts specified in the Play Prompt Table.
Number of Time-out Retries	3	The number of times the caller can try again after exceeding the Input Timeout value or the Interdigit Timeout value.
Abort Play on Input? (Y/N)	YES	Should the playback be aborted if the caller completes input entry during playback?
Allow Overdialing? (Y/N)	NO	Are digits allowed to accumulate from one cell to the next?
Number of Prompts (max 32)	1	This value is updated automatically once the cell is saved with the count of the number of prompts entered in the Prompt Table.

Next cell

Next cell	Explanation
Error	One or more of the prompts listed in the Play Prompt Table does not exist.
Invalid Input	The caller's menu selection could not be found in the Valid Input Table.
Time-out	The Number of time-out Retries has been exceeded.

Note: If the caller's input or menu selection is found in the Valid Input Table, the next cell is taken from the Valid Input Table.

Tables

Table	Explanation
Play Prompt Table	The prompts that are played to the caller. They can be specified as prompt numbers or as buffer names.
Valid Input Table	A list of all valid inputs (menu selections) and the next cell corresponding to each. Valid inputs must be single digits.

PDAT - play prompts with data**Description**

The PDAT cell plays prompts to announce the contents of a buffer. The buffer content is read according to the specified type. For example, if the buffer contains the number 0102 and the type is *date*, the number is read as "January second"; if the type is *number*, the number is read as "one hundred two"; and if the type is *digits*, the number is read as "zero one zero two."

If the type is date and the digits are not valid for dates, the PDAT cell takes the INVALID DATA branch. Notice that the date and time have specific formats:

- The format for date is either mmdd (two digits for the month and two digits for the day — four digits altogether) or mmdyyy (two digits for the month, two digits for the day, and four digits for the year — eight digits altogether). Only the first four digits, which are the digits for the month and day, are read.
- The format for time is hhmm (two digits for the hour and two digits for the minute— four digits altogether). A 24-hour clock is used. The PDAT cell includes “a.m.” or “p.m.” when it reads the time.
- The format for date and time is mmdyyyhhmm (two digits for the month, two digits for the day, four digits for the year, two digits for the hour, and two digits for the minute). There are 12 digits altogether. A 24-hour clock is used. The year is not read. The word “at” is inserted between the day and the hour. For example, if the buffer contains the value “010119900130”, and the type is *date and time*, PDAT reads the number as “January 1 at 1:30 a.m.” Notice that the year, 1990, is not read even though it is in the buffer.

Introductory prompts can be played before the number is read.

Note: The PDAT cell uses system prompts. They must already have been installed on Meridian Mail before PDAT can function. See Appendix A for a list of standard prompts.

Buffers used

The PDAT cell uses the buffer specified by the Data Buffer parameter.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Abort Play on Input	No	This parameter controls what happens if the caller enters input while a prompt is playing. If this parameter is set to Yes, then the caller who is familiar with the application can skip through the prompts by pressing digits that the application is going to request.

Allow Overdialing	No	This parameter determines whether input is buffered from one cell to another. If you set this parameter to No, then the input buffer is cleared before the next GDAT or MENU cell requests input. However, if you set this parameter to Yes, the input buffer is not cleared. The buffer saves the digits until the next request for input. For example, if there are two cells that need a single digit of input and this parameter is set to Yes on the second cell, then the caller can press two digits in quick succession at the first cell, and the second digit is saved until the second cell needs it.
Data Type	TIME	The format for the number. Valid data types are DIGITS NUMBER DATE TIME DATE AND TIME DATE WITH YEAR MILITARY TIME DAY OF WEEK DOLLARS DOLLARS AND CENTS FRACTIONS FLOATING POINT ALPHANUMERIC DIGITS NUMBER

Data Buffer	DIGITS	The buffer containing the number to be read. The number must be valid for the data type. The buffer can be a system buffer or a user-defined buffer.
Number of Prompts (max 5)	0	This value is updated automatically once the cell is saved with the count of the number of prompts entered in the Prompt Table. Note: If a buffer instead of a value is entered, then the value in the buffer indicates the number of prompts to play when the cell is executed in an application.

Next cell

Next cell	Explanation
Error	The number is invalid for the type, or one or more of the introductory prompts do not exist or could not be played.
Inv Data	The data input is not valid for the format specified.
Success	The number has been read.

Tables

Table	Explanation
Play Prompt Table	The introductory prompts that are played to the caller. They can be specified as prompt numbers or as buffer names.

PLAY - play prompts

Description

The PLAY cell plays prompts to the caller. This cell can play a maximum of 32 prompts.

Buffers used

None.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer

Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Number of Prompts (max 32)	1	This value is updated automatically once the cell is saved with the count of the number of prompts entered in the Prompt Table. Note: If a buffer instead of a value is entered, then the value in the buffer indicates the number of prompts to play when the cell is executed in an application.

Next cell

Next cell	Explanation
Error	One or more of the prompts listed in the Play Prompt Table does not exist.
Success	The prompts were played back successfully.

Tables

Table	Explanation
Play Prompt Table	The introductory prompts that are played to the caller. They can be specified as prompt numbers or as buffer names.

PMSG - play a message

Description

The PMSG cell plays a message to the caller.

The PMSG cell plays the message located in the CURRENT MESSAGE buffer. If the RMSG cell just recorded the message, the message is already in the CURRENT MESSAGE buffer. The caller can stop playing the message by pressing the Termination Digit.

Note: To retrieve a message that has been forwarded in a Meridian mailbox, you should use Meridian Mail.

Buffers used

CURRENT MESSAGE is the number of the message to be played.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer

Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Termination Digit	DEFAULT	The key that the caller can press to terminate playback. DEFAULT is the termination digit from the Default Cell screen.

Next cell

Next cell	Explanation
Error	The message could not be played or does not exist.
Success	The message was played back successfully.

Tables

None.

PRGS - call progress detection**Description**

The PRGS cell obtains the termination state of the previous out-dial attempted by COUT or DOUT cells. This cell contains multiple branches depending on the call's progress.

Cell type

Call Management.

Buffers used

None.

Buffers updated

None.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Call State	TBD	Last call progress state change.
Call Info	TBD	Last Call Info State change.

Next cell

Next cell	Explanation
No Answer	The call was not answered.
Misc. Answer	The call was answered (Miscellaneous).
Short	The call was answered by Short Silence.
Long	The call was answered by Long Silence.
Pager	The call was answered by Pager.
Error	Failure to establish connection.
Voice	The call was answered by Voice.

Tables

None.

QCNT - SQL select count cell**Description**

The QCNT cell interfaces with a relational DBMS to execute an SQL Select Count statement that returns the number of rows in a database table or views matching specific selection criteria. Upon successful completion of the cell, the SQL ROWS system buffer contains the number of rows that were found.

Buffers used

Buffers can be used in a “WHERE” clause.

Buffers updated

Buffer	Explanation
SQL ROWS	QCNT updates this buffer with the number of rows matching the selection criteria.
SQL ERRORS	If an error occurs, QCNT updates this buffer.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
SQL Table Name	""	The name of the table, view, or a buffer containing the name for which the Select count is being requested.

Next cell

Next cell	Explanation
Fail	An error occurred while processing this cell transaction. The system buffer SQL ERROR contains the error code returned by the DBMS.
No Rows	No rows in the table or view meet the WHERE clause criteria. The system buffer, SQL ROWS, is set to zero.
Success	The function has been successfully performed. The system buffer, SQL ROWS, contains the number of rows that were found.

Tables

Tables	Explanation
WHERE Clause	The WHERE clause table identifies the conditions against which the transaction is matched. The WHERE clause table consists of the following fields: TYPE: Value fields data type (STRING, NUMERIC, MONEY, DATE, FLOAT) LOCATION: Logic operator (AND, OR, NOT) ('s: Left parenthesis type COLUMN: SQL column name or SQL expression OPERATOR: Operator (<,<=,>,>=) VALUE: Value or buffer)'s: Right parenthesis type

QDEL - SQL delete cell

The QDEL cell interfaces with a relational DBMS to execute an SQL delete statement. This transaction removes one or more rows from a specified database table. The rows to be deleted are selected according to the criteria you specify in the WHERE Clause table. Upon successful completion of the cell, the SQL ROWS system buffer contains the number of rows deleted.

Buffers used

Buffers can be used in the WHERE clause.

Buffers updated

Buffer	Explanation
SQL ROWS	QDEL updates this buffer.
SQL ERRORS	If an error occurs, QDEL updates this buffer.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment Field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
“SQL Table Name”	“ ”	The name of the table or view, or a buffer containing the name for which the Select Count is being requested.

Next cell

Next cell	Explanation
Next cell - Fail	An error has occurred. The system buffer SQL ERROR contains the error code returned by the DBMS.
Next cell - No Row	No rows in the specified table or view meet the WHERE clause criteria. The system buffer SQL ROWS is set to zero.
Next cell - Success	The delete rows transaction was successful. The system buffer SQL ROWS contains the number of rows that have been deleted.

Tables

Tables	Explanation
WHERE Clause	The WHERE clause table identifies the conditions against which the transaction is matched. The WHERE clause table consists of the following fields: TYPE: Value fields data type (STRING, NUMERIC, MONEY, DATE, FLOAT) LOGICAL: Logic operator (AND, OR, NOT) ('s: Left parenthesis type COLUMN: SQL column name or SQL expression OPERATOR: Operator (<,<=,>,>=) VALUE: Value or buffer)s: Right parenthesis type

QINS - SQL insert cell

Description

The QINS cell interfaces with a relational DBMS to execute an SQL Insert statement. QINS adds a row to a specific database table according to the Column and Value table you specify.

Buffers used

Any of the values you list in the Column and Value table can be Application Editor buffer names.

Buffers updated

Buffers	Explanation
SQL ERROR	If an error occurs, QINS updates this buffer.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
"SQL Table Name" (Buffer Value)	" "	The name of the table to view from which a row of data is selected.

Next cell

Next cell	Explanation
Fail	An error has occurred while processing this transaction. The system buffer SQL ERROR contains the error code returned by the DBMS.
Success	A row has been added to the specified database table with the values listed in the Column and Value table.

Tables

Tables	Explanation
Column and value	A list of column names and the corresponding values for the row being inserted in the database table.
TYPE:	Value field data type (STRING, NUMERIC, MONEY, DATE, FLOAT)
WHERE Clause	The WHERE clause table identifies the conditions against which the transaction is matched. The WHERE clause table consists of the following fields: TYPE: Value fields data type (STRING, NUMERIC, MONEY, DATE, FLOAT) LOCATION: Logic operator (AND, OR, NOT) ('S: Left parenthesis type COLUMN: SQL column name or SQL expression OPERATOR: Operator (<,<=,>) VALUE: Value or buffer)'s: Right parenthesis type

QSEL - SQL select cell

Description

The QSEL cell interfaces with a relational database DBMS to execute an SQL Select statement that retrieves a row of data from a database table or view. The columns to be selected and the buffers into which the values should be returned are identified in the Column and Buffer table. You specify the selection criteria for the retrieval in the WHERE Clause table. Although there is no limit to the number of rows that an SQL Select statement can return, the QSEL cell returns the values for only one row. To select multiple rows, you should include one QSEL per row.

Buffers used

Buffers can be used in a “WHERE” clause.

Buffers updated

Buffers	Explanation
Buffers listed in the Column and Buffer table	Column values for the row matching the WHERE clause selection criteria are returned into the specified buffers.
SQL ERROR	If an error occurs, this buffer is updated with the error code returned by the DBMS.
SQL ROWS	This buffer contains the number of rows returned by the transaction. Since QSEL returns a maximum of one row, this buffer IS set to 0 or 1.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
SQL Table Name (Buffer Value)	“ ”	The name of the table to view from which a row of data is selected.

Next cell

Next cell	Explanation
Fail	An error occurred while processing this transaction. The system buffer SQL ERROR contains the error code returned by the DBMS.
No rows	No rows in the table or view meet the WHERE clause criteria. The system buffer SQL ROWS is set to zero.
Success	One or more rows matched the WHERE clause criteria. The system buffer SQL ROWS is set to 1.

Tables

Tables	Explanation
Column and value	A list of columns and the Application Editor Buffers into which the corresponding values are returned for the row retrieved from the database table.
WHERE Clause	The WHERE clause table identifies the conditions against which the transaction will be matched. The WHERE clause table consists of the following fields: TYPE: Value fields data type (STRING, NUMERIC, MONEY, DATE, FLOAT) LOCATION: Logic operator (AND, OR, NOT) ('S: Left parenthesis type COLUMN: SQL column name or SQL expression OPERATOR: Operator (<,<=,>,>=) VALUE: Value or buffer)'s: Right parenthesis type

QUPD - SQL update cell**Description**

The QUPD cell interfaces to a relational DBMS to execute an SQL Update statement that modifies the values in one or more rows of a database table. Identify the list of columns to be changed and the corresponding new values in the Column and Value table. Specify the criteria for selecting the rows to be modified in the WHERE Clause table. When the cell completes successfully, the system buffer SQL ROWS contains the number of rows that were updated.

Buffer used

Buffers can be used in a "WHERE" clause.

Buffers updated

Buffers	Explanation
SQL ERROR	If an error occurs, QUPD updates this buffer to the error code returned by the DBMS.
SQL ROWS	QUPD updates this buffer to reflect the number of rows that are updated.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
SQL Table Name (Buffer Value)	" "	The name of the table or view from which a row of data is updated.

Next cell

Next cell	Explanation
Fail	An error occurred while processing this transaction. The system buffer SQL ERROR contains the error code returned by the DBMS.
No rows	No rows in the table or view meet the WHERE clause criteria. The system buffer SQL ROWS is set to zero.
Success	One or more rows were updated in the specified database table. The system buffer SQL ROWS contains the number of rows that were modified.

Tables

Tables	Explanation
Column and Value	A list of column names and their values for the rows being updated in the database table.
WHERE Clause	The WHERE clause table identifies the conditions against which the transaction is matched. The WHERE clause table consists of the following fields: TYPE: Value fields data type (STRING, NUMERIC, MONEY, DATE, FLOAT) LOCATION: Logic operator (AND, OR, NOT) ('S: Left parenthesis type COLUMN: SQL column name or SQL expression OPERATOR: Operator (<,<=,>,>=) VALUE: Value or buffer)'s: Right parenthesis type

RETN - return from a subroutine call

Description

The RETN cell is used in conjunction with the GSUB cell. When the RETN cell is executed, Meridian IVR returns control to the next cell specified by the GSUB cell. The GSUB cell can be in the same application or a different application than the RETN cell. If control cannot be transferred, Meridian IVR executes the error branch of the next cell specified for the GSUB cell.

Buffers used

None.

Buffers updated

None. Any system buffers that were changed between the GSUB and the RETN cell remains changed after the RETN cell is executed. This also applies to user-defined buffers if the RETN cell is within the same application as the GSUB cell. If the RETN cell is in a separate application, the user-defined buffers are restored to their values before the GSUB cell is executed.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.

Next cell

Next cell	Explanation
Error	The operation was not successful.

Tables

None.

RMSG - record message**Description**

The RMSG cell allows the caller to record a message. The number of the newly recorded message is then stored in the CURRENT MESSAGE buffer.

To end recording and save the message, the caller can press the Termination Digit. Alternatively, the caller can press the Abort Digit to end recording, but the message is discarded and is not added to a Meridian mailbox.

The Maximum Recording Time sets a limit. If the caller does not press either the Termination Digit or the Abort Digit within this limit, recording ends automatically. The application can then branch to the Time-out next cell.

The Introduction Prompt Table lists prompts to be played for the caller before recording begins. The prompts can tell the caller about the Termination and Abort digits as well as the maximum recording time.

After the RMSG cell records a message, the application can either

- delete the message from the CURRENT MESSAGE buffer using the DMSG cell
- put the message into a Meridian mailbox using the predefined access user function

If the message is not deleted or added to the mailbox, the contents of the message are no longer available to Meridian IVR.

Buffers used

None.

Buffers updated

Buffer	Explanation
CURRENT MESSAGE	The number of the newly recorded message.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Maximum Recording Time (1–840 secs)	60	The maximum recording time in seconds. If this value is exceeded, recording ends automatically.
Message length	MESSAGE LENGTH	A buffer which captures the returned value of the length of the current recorded message, in seconds.
Termination Digit	DEFAULT	The key the caller can press to end recording and keep the message. DEFAULT is the termination digit from the Default Cell screen.

Abort Digit	DEFAULT	The key the caller can press to end recording and erase the message. DEFAULT is the abort digit from the Default Cell screen.
Abort Prompt	DEFAULT	The prompt the caller hears after pressing the abort digit. DISABLE means that no prompt is played. DEFAULT is the abort prompt from the Default Cell screen.
Number of Prompts (max 5)	0	This value is updated automatically once the cell is saved with the count of the number of prompts entered in the Prompt Table.

Next cell

Next cell	Explanation
Error	The message has not been recorded.
Time-out	The maximum recording time as specified (from 1 to 840 seconds) has been exceeded.
Success	Recording has been successful. If you want to add the recorded message to the Meridian IVR mailbox, the next cell should be a USER cell that puts the message in the mailbox. Using this approach ensures that the message is saved even if the caller hangs up.

Tables

Table	Explanation
Introduction Prompt Table	The prompts played to the caller before recording begins. They can be specified as prompt numbers or as buffer names.

SMSG - send message**Description**

The SMSG cell sends a message that has been previously recorded and addressed.

Cell type

Messages.

Buffers used

The SMSG cell uses the buffer specified by the Current Message parameter.

Buffers updated

None.

Parameters

Parameter	Valid values	Default
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Current Message	CURRENT MESSAGE	The number of the message to be sent.

Priority	Normal, Urgent, Economy	Normal
Tags	None, Private	None

Next cells

Next cell	Explanation
Error	The message was not sent.
Success	The message was sent successfully.

Tables

None.

START - default cell

The START or Default cell is usually the first cell in your application. This cell allows you to do the following:

- Select a message database for the application to use.
- Establish the Minimum Voice Duration which relates to a special option for MENU cells.
- Choose any cell in the application as the first to be executed when you run the application.
- Designate the first cell in a sub-application for this application. Subapplications are explained later.

Another important function of the START cell is that it allows you to establish default values for some of the cell parameters in the application. For example, an application can have an RMSG cell that allows the caller to record messages. One of the RMSG parameters is the Termination Digit. The value you select for this parameter determines the key that the caller should press to finish recording a prompt or a message. To select a value for this parameter, you can enter any value from 0 to 9, * or #, A, B, C, or D as the Termination Digit.

However, instead of entering a specific value, you can enter **DEFAULT** as the value of the Termination Digit parameter in the RMSG cell. If you do, the actual value of this cell's Termination Digit is taken from the Termination Digit on the Default cell parameter.

If your application has many RMSG cells, this feature can be very useful. If you change the value on the Default cell screen, you automatically change the value of the Termination Digit in any RMSG that has been assigned the value **DEFAULT**. This way, you can use a single change on the Default cell parameter to change the whole application.

Other cell types can have a Termination Digit. If you use the value **DEFAULT** for all the Termination Digits, the application will have a consistent "feel". You should use the value **DEFAULT** wherever possible to ensure that key actions and time-out values remain the same from cell to cell.

There are several restrictions you need to remember when you use the cleanup branch in your application. These restrictions are listed in the attention box found in the section "**Designing an application**" on page 3-3 in Chapter 3.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer

Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Abort Digit	NONE	The caller can press this digit to stop recording a prompt or a message. Once the caller presses this key, the application does not save the recording or add it to the message database.
Abort Prompt	117 Recording has been aborted. The message will not be saved.	The caller hears this prompt if playback or recording is aborted. This can happen if the caller exceeds the Maximum Paused Time, and your application allows you to select ABORT as the Pause time-out Action.
Termination Digit	#	The caller presses this digit to finish recording a prompt or a message, or to finish playing back a message. When the caller uses this key to finish recording, the application saves the recording and adds it to the message database.
Interdigit Time-out (seconds)	5	The maximum amount of time to press the first digit in the input, and the time between each digit in the input.
Minimum Voice Duration (ms)	200	Sets the minimum valid duration of speech that can be accepted for positive confirmation.

SQL DBMS Type	NONE	The type of the DBMS package, for example, Ingres.
SQL Database Name	NONE	The name of the SQL database from which you want to access data.
SQL Maximum Server Count	1	The number of servers allowed.
User Name		The name of the user to access the SQL database.
Password		The password of the user that accesses the SQL database.
Host Name	NONE	The name of the machine on which the SQL database resides.

STOR - store

Description

The STOR cell puts a copy of a character string into a buffer. The source can be either a buffer or a string of up to 31 letters, numbers, or any of the other characters that you type on a keyboard, except commas. For example, if the source is the DIGITS buffer containing the value 23 and the destination is the MAILBOX ID buffer, the STOR cell puts the number 23 into the MAILBOX ID buffer. The value in the DIGITS buffer is not changed by this procedure.

Note: If the source is a numerical value, enclose it in quotation marks.

Buffers used

The STOR cell uses the buffer specified by the Source parameter.

Buffers updated

The STOR cell updates the buffer specified by the Destination Buffer parameter.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Source (Buffer or Value)	0	A buffer name or a string of characters. The characters or the contents of the buffer are copied to the destination buffer.
Destination Buffer	DIGITS	A buffer name.

Next cell

Next cell	Explanation
Success	The data has been copied from the source to the destination.

Tables

None.

SUBS - substring buffer

Description

The SUBS cell copies a specified portion of a string of characters and places it in a destination buffer. The source can be either a string or a buffer that contains a string. If the source is a string, enclose it in quotation marks.

The Offset parameter specifies the starting point in the source string beginning with 0. The Length parameter states the number of characters to copy. If the value of the Length parameter is 0, the range begins at the offset and continues to the end of the source string.

Example

Suppose the source is a buffer containing the following string:

23January1991Thursday

Offset 0 *Offset 9*

If the value of the Offset parameter is 9 and the value of the Length parameter is 4, the SUBS cell copies **1991** from the source buffer and places it in the destination buffer. Any value that was originally in the destination buffer is erased before the new substring is placed in it. The value in the source buffer is unchanged after the SUBS cell is executed.

Example

As another example, suppose the source is the following string:

"23January1991"

Offset 0 *Offset 9*

If the value of the Offset parameter is 2 and the value of the Length parameter is 0, the SUBS cell copies **January1991** from the source buffer and places it in the destination buffer. Notice that the entire substring from the offset to the end of the string is copied because the length is 0.

Buffers used

The SUBS cell uses the buffer specified by the Offset parameter.

Buffers updated

The SUBS cell updates the buffer specified by the Destination parameter.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Source (Buffer/Value)	DIGITS	Either a string which must be enclosed in quotation marks or a buffer containing a string from which the substring is to be copied.
Destination Buffer	DIGITS	The buffer in which the copied substring is to be placed.

Offset (Buffer/Value)	0	The position of the first character to be copied. Characters in the source string are counted from left to right, beginning with zero.
Length (Buffer/Value)	0	The number of characters to be copied. This can be specified as a value or as a buffer containing the value. If the length is 0, the string is copied to the end.

Next cell

Next cell	Explanation
Fail	An error has occurred (for example, there is nothing in the source buffer).
Success	The substring function has been performed successfully.

Tables

None.

SXFR - supervised call transfer**Description**

The SXFR cell is similar to the XFER (Call Transfer) cell, except that SXFR does not disconnect the caller if the transfer is unsuccessful; instead, the application takes the error branch and continues with the current caller.

Cell type

Call Management.

Buffer used

The SXFR cell uses the buffer specified by the Phone Number parameter.

Buffer updated

Buffer	Explanation
Status Code	The ACCESS return code if the transfer failed. The return codes for this cell are Code #9: MME_BUSY_DN DN is busy. Code #12: MME_CALL_FAILURE Call connection attempt has failed.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.

Phone Number	DIGITS	The buffer containing the phone number to be dialed. The phone number is passed to ACCESS directly, without any translation for asterisks or other special characters.
Status Code	DATA EXCHANGE #1	THE ACCESS return code if the transfer failed.

Next cell

Next cell	Explanation
Error	The call was not transferred successfully; the current call is still active. The status code is stored in the specified buffer.

Note: If the transfer outdial is successful, there is no next cell. The application ends and executes the cleanup handler.

TIME - get current date and time**Description**

The TIME cell gets the current date, time, and day of the week from the UNIX clock. The Current Time parameter contains the time as 24-hour clock time in the format HHMM. The Current Date parameter contains the date in the format MMDDYYYY. The Day of Week parameter contains the day of the week in numeric format where 1 is Monday and 7 is Sunday.

Note: To get the current date from Meridian Mail, use the predefined access user function.

Buffers used

None.

Buffers updated

The TIME cell updates the buffers specified by the Current Time, Current Date, and Day of Week parameters.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Current Time	TIME	The buffer that contains the current time.
Current Date	DATE	The buffer that contains the current date.
Day of Week	DAY	The buffer that contains the day of the week.

Next cell

Next cell	Explanation
Error	The current date and time were not returned.
Success	The current date and time were returned successfully.

Tables

None.

UDLV - unschedule delivery**Description**

The UDLV cell unschedules an event that was previously scheduled by a DELV cell.

When the event is scheduled, an event ID number is returned to the DELV cell and placed in a buffer. This event ID number must be entered as the Schedule Event ID parameter of the UDLV cell to indicate which event to unschedule. If necessary, you can use a Get Schedule Event List (LDLV) cell to get the event ID number again.

Buffers used

The UDLV cell uses the buffer specified by the Schedule Event ID parameter.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer

Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Schedule Event ID	DELIVERY EVENT ID	The buffer containing the ID number of the event to be unscheduled.

Next cell

Next cell	Explanation
Error	The delivery event ID is invalid.
Success	The event has been unscheduled.

Tables

None.

UPDT - update information database**Description**

The UPDT cell allows data to be inserted into an informational database. If the record specified is found in the specified information database, up to ten buffers of data can be inserted into the record.

You must specify a buffer with valid contents for each buffer held in the record being updated.

Buffers used

Record Number.

Buffers updated

None.

Parameters

Parameters	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Database Name	<None>	The name of the information data base to be updated.
Record Number	DIGITS	The buffer that contains the storage location number to be updated in an information database. This can be a system buffer or a user-defined buffer.
Buffer count	0	How many buffers of information to insert into a database record. The prompt numbers must be listed in the Input Buffer Table.

Next cell

Next cell	Explanation
Not found	There was no record in the information database for the specified record number.
Found	The data was inserted into the specified record number.

Tables

Tables	Explanation
Input Buffer Table	The name of the buffers that contain the data to be inserted into the information database.

USER - connect user function**Description**

The USER cell type is designed to be used by experienced computer programmers. This cell interfaces the application with a user function which is customized code that has been written in the “C” programming language. Before you use this cell type, refer to Chapter 5, “Creating user functions”.

A user function is a collection of individual user-defined functions bundled together. You access a specific user-defined function when calling the user function. For this reason, the Connect User Function cell type has a parameter for a Function Code. The user function calls only the user-defined function that is indicated by the Function Code parameter.

When you create a cell with the Connect User Function cell type, you can designate a set of input buffers to pass the user function any information it needs. You can also designate a set of output buffers so that the user function can return information to the application once the function has finished. As with any Meridian IVR buffer, each of these input and output buffers can be used to store a string of up to 31 characters which can be any ASCII character, except commas.

- If the status code is Success, the next cell depends on the reply code. The USER cell checks the Reply Code Table to find the next cell corresponding to the reply code.
- If the status code is Failure, the application branches to the Fail next cell.
- If the status code is time-out, the application branches to the time-out next cell.

Note: Do not use more than 13 USER cells in an application. Exceeding this limit may cause unexpected results when you run the application.

Buffers used

The USER cell uses the input buffers listed in the Input Buffer Table.

Parameters

Parameter	Initial value	Explanation
Call Audit Enabled?	No	Determines if this cell logs the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment field Contents of the Call Audit Information buffer

Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
User Function Name	<NONE>	The name of the user function to be interfaced with the application.
Function Code (0–99)	1	The individual user-defined function to be executed this time. To create your own user functions, refer to Chapter 3, “Creating user functions.”
Time-out (0–75 secs)	15	Maximum time in seconds for the user function to perform its task. If this value is exceeded, a time-out occurs and a time-out status is returned.
Reply Codes	None	Number of valid reply codes to be returned after execution of the user function. You must list the reply codes in the Reply Code Table.
Input Buffers (max 10)	0	Number of buffers the user function passes back to the application. This value is updated automatically once the cell is saved with the count of the number of buffers.
Output Buffers (max 10)	0	Number of buffers the user function passes back to the application. This value is updated automatically once the cell is saved with the count of the number of buffers entered in the Buffer Count Table.

Next cell

Note: If the user function returns a Success status code, the next cell comes from the Reply Code Table.

Next cell	Explanation
Time-out	A time-out status code has been returned.
Fail	A failure status code has been returned.

Tables

Table	Explanation
Input Buffer Table	Lists the name of each input buffer.
Output Buffer Table	Lists the name of each output buffer.

USER (access) - get system date**Description**

This predefined user function called “access” is included with the Meridian IVR system. Get System Date is invoked through the USER cell type by specifying “access” as the user function name and 1 as the function code.

Get System Date, referencing ACCESS API m_GetSysDate (), returns the date and time as set in the Meridian Mail machine. The returned date and time are those of the general system clock of the Meridian Mail machine. The returned date is the time stamp on all files, and the reference point for delayed message delivery.

Notes:

- 1 You can also use the MDTE cell to get the system date and time.
- 2 Do not use more than 13 USER cells in an application. Exceeding this limit may cause unexpected results when you run the application.

Inputs

None.

Outputs

Output	Content	Examples
Buffer 1	ACCESS return code	
Buffer 2	Year	1994
Buffer 3	Month	Range from 1 to 12
Buffer 4	Day	Range from 1 to 31
Buffer 5	Hour	Range from 0 to 23
Buffer 6	Minute	Range from 0 to 59
Buffer 7	Second	Range from 0 to 59
Buffer 8	Date	Format mmddyyyy
Buffer 9	Time	Format hhmm

Reply codes

Reply Codes	Meaning
Reply code 0	Success
Reply code 1	Failure

Notes

Buffers 8 and 9 are in the proper format required for playing date and time in the PDAT cell.

USER (access) - get call info

Description

This predefined user function called “access” is included with the Meridian IVR system. Get Call Info is invoked through the USER cell type by specifying “access” as the user function name and 2 as the function code.

Get Call Info, referencing ACCESS API `m_GetCallInfo ()`, is for an application that requires detailed information on either incoming or outgoing calls. For example, an application that successfully executes a COUT cell can call this function to determine the address of the agent that answered the call in a call center environment.

Notes:

- 1 You can also use the INFO cell to get call information.
- 2 Do not use more than 13 USER cells in an application. Exceeding this limit may cause unexpected results when you run the application.

Inputs

None.

Outputs

Output	Content	Examples	Type of output
Buffer 1	ACCESS return code		Character string
Buffer 2	Call State	Last CallProgress State Change	Short integer
Buffer 3	Call InfoLast	CallInfo State Change	Short integer
Buffer 4	Calling DN	DN of caller	Character string
Buffer 5	Calling DN Type	DN Type of caller	Character string
Buffer 6	Called DN	DN dialed by caller	Character string

Buffer 7	Called DN Type	DN Type of called DN	Character string
Buffer 8	Called TN	Packed TN	Character string
Buffer 9	Call Type	Type of call	Character string
Buffer 10	Device Type	Device type	Character string

Note: The values that go into buffers 2 and 3 are listed in tables under the section “**USER (access) - call progress detection**” on page 7-131.

Reply codes

Reply codes	Meaning
Reply code 0	Success
Reply code 1	Failure

Notes

The m_GetCallInfo() API has been implemented primarily to support Coordinated Screen Transfer.

Following is a scenario for how you can implement this and steps you can follow to implement Coordinated Screen Transfer.

- Use the COUT cell to call an agent.
- Use the USER cell with the function name “access” and a function code of 2.
- Use a CHEK cell using the packed TN returned in buffer 8 as the record number to look up the agent to which this packed DN refers. Retrieve agent data from the database.
- Pass the agent data onto the host (through a customized user function or the predefined TRS user function) which causes the information screen to be transferred to the agent who was just called.
- Use CEND to conference the agent with the caller.
- Use the HANG cell to take the IVR system out of the call.

This scenario requires you to set up an information database that matches packed TNs to a video display terminal so that the host computer can identify the terminal to receive the screen.

This scenario also assumes that the IVR application has already collected information from the caller and is currently accessing the host screen which must be sent to the agent. Your approach can vary.

USER (access) - add box to address

Description

This predefined user function called “access” is included with the Meridian IVR system. Add Box To Address is invoked through the USER cell type by specifying “access” as the user function name and 3 as the function code.

Add Box To Address, referencing ACCESS API `m_AddBoxToAddr ()`, enables a message to be addressed by mailbox numbers. The address's full name is returned. This function should be called after an RMSG has been successfully completed and before a Send Message has been issued.

Notes:

- 1** You can use the ADDR message cell to address a message by a mailbox number.
- 2** Do not use more than 13 USER cells in an application. Exceeding this limit may cause unexpected results when you run the application.

Inputs

Input	Content
Buffer 1	Number of message to be addressed
Buffer 2	Destination Mailbox
Buffer 3	Destination Mailbox (optional)
Buffer 4	Destination Mailbox (optional)
Buffer 5	Destination Mailbox (optional)
Buffer 6	Destination Mailbox (optional)
Buffer 7	Destination Mailbox (optional)
Buffer 8	Destination Mailbox (optional)
Buffer 9	Destination Mailbox (optional)
Buffer 10	Destination Mailbox (optional)

Outputs

Output	Content
Buffer 1	ACCESS return code
Buffer 2	Full name of owner of mailbox (or access error code)
Buffer 3	Full name of owner of mailbox (or access error code)
Buffer 4	Full name of owner of mailbox (or access error code)
Buffer 5	Full name of owner of mailbox (or access error code)
Buffer 6	Full name of owner of mailbox (or access error code)
Buffer 7	Full name of owner of mailbox (or access error code)

Output	Content
Buffer 8	Full name of owner of mailbox (or access error code)
Buffer 9	Full name of owner of mailbox (or access error code)
Buffer 10	Full name of owner of mailbox (or access error code)

Reply codes

Reply codes	Meaning
Reply code 0	Success
Reply code 1	Failure

Notes

A call to this user function with this function code addresses the message specified in buffer 1 to all the mailboxes specified in buffers 2 to 10. You can specify anywhere from one to nine destination mailboxes.

Upon completion of the user function, the first 31 characters of the full name of the addressee are contained if the addressing option for the particular mailbox was successful; otherwise, the access error code can be found in its place.

The user function attempts to address the message to all destination mailboxes independent of how many of the mailboxes cannot be found.

USER (access) - send message

Description

This predefined user function called “access” is included with the Meridian IVR system. Send Message is invoked through the USER cell type by specifying “access” as the user function name and 4 as the function code.

Send Message, referencing ACCESS API `m_SendMsg ()`, sends a message that has been previously recorded and addressed.

Notes:

- 1 You can also use the SMSG cell to send a message.
- 2 Do not use more than 13 USER cells in an application. Exceeding this limit may cause unexpected results when you run the application.

Inputs

Input	Content
Buffer 1	Number of message to be sent
Buffer 2	Priority

Priority*	Description
1	Normal delivery: specified if neither Urgent or Economy apply.
2	Urgent (high priority) delivery across network.
8	Messages held for delivery across a network.

Buffer 3 Tags	Refer to the following table for the description of the tags.
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Tag*	Description
0	No special tags.

4	Sender receives an acknowledgment message when the message is first opened by each recipient.
16	Indicates that the contents are confidential; the message cannot be forwarded.

Note: * Since these ACCESS APIs are called from within a USER cell, no input error checking is performed. No error is detected if Priority or Tag contain invalid names.

Outputs

Output	Content
Buffer 1	ACCESS return code

Reply codes

Reply codes	Meaning
Reply code 0	Success
Reply code 1	Failure

Note: Once a message is sent, it can not be resent or addressed differently. It can only be played and deleted.

USER (access) - call progress detection

This predefined user function called “access” is included with the Meridian IVR system. Call Progress Detection is invoked through the USER cell type by specifying “access” as the user function name and 5 as the function code.

Call Progress Detection, referencing ACCESS API Call Progress Detection, obtains the termination state of the previous out-dial attempted by COUT or DOUT cells. This function, unlike the other function returns, has more reply codes.

Notes:

- 1 You can use the PRGS cell to obtain the termination state of the previous out-dial attempts.
- 2 Do not use more than 13 USER cells in an application. Exceeding this limit may cause unexpected results when you run the application.

Inputs

None.

Outputs

Output	Content
Buffer 1	ACCESS return code
Buffer 2	Call State (last Call Progress State Change)

Note: The numerical values listed in the tables below are the values that go into the buffer.

Call State (Buffer 2)	Description
1	Call is established or answered.
3	Call party has rung.
8	Called party is busy.
9	Call is rejected.

11	Call connection attempt failed.
12	Call resulted in collision.
13	Call/Transfer/Conference/Re-connect is successful.
999	Set has gone on-hook.
998	Called/calling DN changed.

Buffer 3	Call Info (last CallInfo State Change)
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Call Info (Buffer 3)	Description
0	No additional information is available.

Call state information**Call state=3**

Call Info values	Description
1	Waiting for ACD queue.
2	Waiting in the attendant queue.
5	Waiting in the ESN queue.
6	Idle ACD agent found, being rung.
3	A trunk has been seized.
4	The call is parked.

Call state=9

Call Info values	Description
8	Call blocked due to no resources.
9	Access restricted.

6	Idle ACD agent found, being rung.
3	A trunk has been seized.
4	The call is parked.

Call state=11

Call Info values	Description
10	Bad originating DN.
11	Bad called DN.
13	Incomplete originating DN.
14	Incomplete called DN.
12	Internal switch error.
15	Originating party is busy.
16	Originating party is maintenance busy.
19	Another user is using the DN.
17	500/2500 set is on hook.

Call state=11

Call Info values	Description
18	Originating party disconnected.
20	Invalid TN.
21	Incorrect customer number.
22	Initialization of transfer failed.
25	Completion of transfer failed.
24	Conference failed.
63	Internal error.

Call State=12

Call Info values	Description
61	Collision with the same service.
62	Collision with a different service.

Reply codes

Reply code 1	Answered
Reply code 0	Not Answered

XFER - transfer outdial**Description**

The XFER cell dials out a phone call on behalf of a caller who already has a call in progress on a channel. Meridian IVR dials a second party's phone number, transfers the original caller to the new call, then releases the call. If the transfer is successful, the application ends. If the transfer cannot be performed, the application branches to the Error next cell and continues to process the original call with no special recovery required.

The XFER cell, in contrast to Continuation Outdial (COUT), makes no attempt to ensure that the second party accepts the call. The XFER cell releases the call as soon as it dials the digits, and before it detects ringing on the second party's phone number.

Buffers used

The XFER cell uses the buffer specified by the Phone Number parameter.

Buffers updated

None.

Parameters

Parameter	Initial Value	Explanation
Call Audit Enabled?	No	Determines if this cell will log the following information to the call audit statistics file (audit_stat.d): Application Name Cell Name Cell Number Date and Time of Cell Execution Contents of the Cell Comment Field Contents of the Call Audit Information buffer
Call Audit Information	DIGITS	When you enable Call Auditing, the Call Auditing process logs the contents of this buffer to the audit_stat.d file.
Phone #	DIGITS	The buffer containing the phone number to be dialed.

Next cell

Next cell	Explanation
Error	The call was not transferred successfully; the current call is still active. The status code is stored in the specified buffer.

Note: If the transfer outdial is successful, there is no next cell and the application ends.

Tables

None.